

**REMARKS**

Reconsideration and allowance in view of the foregoing Amendment and the following remarks are respectfully requested.

By this Amendment, claims 1, 42, 43, 45-72 are pending in the application. Claims 1, 42, 43, 45, 46, 47, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 60, 62, 64, 65 and 66 are amended and new claims 70-72 are added.

Claim 50/42 was indicated to contain allowable subject matter if rewritten in independent form, however, to expedite prosecution, Applicants have amended claim 50 to depend from allowed claim 1 or 43.

Applicants are pleased to note that claims 1, 43, 45-49, 50/1, 50/43, 51/1, 51/43, 52/1, 52/43, 53-61, 63 and 66-69 are allowed. Applicants point out that claims 1, 43, 45, 46, 47, 49, 53, 54, 55 and 56 have received minor modifications to clarify the language of those claims. However, Applicants submit that these modifications are clarifying in nature only and that the substance of the claim has not been altered. Specifically, Applicants have amended claims 1, 43, 45, 46, 47, 49, 53, 54, 55 and 56 to recite that the negative lens is located nearest to the object side of the second lens and that  $v_{21}$  is the Abbe's number of the negative lens, as described at page 14, lines 14-21 of Applicants' specification (e.g., paragraph [0036] of published application US-2002-0057502-A1). Therefore, no new matter has been added or no new issues are raised by the amendments to claims 1, 43, 45, 46, 47, 49, 53, 54, 55 and 56 since the amendments thereto merely correct a clerical error. Accordingly, Applicants respectfully submit that claims 1, 43, 45, 46, 47, 49, 53, 54, 55 and 56 remain allowable. Further, claims 50, 51 and 52 have been amended to depend from allowed claim 1 or 43 and no longer depend from rejected claim 42.

Claims 42, 51/42, 52/42, 62, 64 and 65 were under 35 U.S.C. §103(a) over Masumoto (U.S. Patent No. 4,634,236) in view of Uzawa (U.S. Patent No. 5,798,872). With respect to claims 51/42 and 52/42, this rejection is moot because claims 51 and 52 have been amended to depend from claim 1 or 43. With respect to claims 42, 62, 64 and 65, Applicant respectfully submits that the amendments to claims 42, 62, 64 and 65 obviate the rejection.

With respect to claim 42, Applicants note that this claim recites "the third lens group consists of three lenses, a positive lens, a positive lens and a negative lens". Claim 62 now recites the third lens group "consists of three lenses, a positive lens, a positive lens and a bi-concave negative lens, or two lenses, a positive lens and a bi-concave negative lens." Claims 64 and 65 now recite the third lens group "consists of three lenses, a positive lens, a positive lens and a negative lens, or two lenses, a positive lens and a negative lens." In contrast, Masumoto discloses a zoom lens system in which the third lens group shown in FIG. 25 has more than three lenses, which is different from the claimed invention (See Figs. 1a, 1b, 2a, 2b, for example). Uzawa does not remedy the deficiencies of Masumoto noted above and is relied upon for its teaching of a third lens group having at least one aspherical surface. Thus, even if Masumoto were combined with Uzawa, which Applicants do not concede, the third lens group would have more than three lenses although the third lens group could have at least one aspherical surface. Accordingly, Applicants respectfully request that the rejection of claims 42, 62, 64 and 65 be withdrawn.

New claims 70-72 are added to claim more fully the originally disclosed subject matter. No new matter has been added.

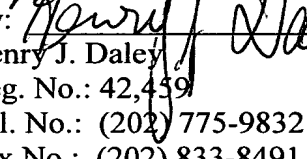
Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached Appendix is captioned **"Version with markings to show changes made"**.

Applicant has addressed all of the Examiner's rejections and respectfully submits that the application is in condition for allowance. A notice to that effect is earnestly solicited.

Should there be any questions or concerns regarding this application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,

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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Please amend claims 1, 42, 43, 45, 46, 47, 49, 50, 51, 52, 53, 54, 55, 56, 62, 64 and 65 as follows:

1. (Thrice Amended) A zoom lens system comprising in order from an object side of said zoom lens system:

a first lens group having positive refracting power;

a second lens group that has negative refracting power and moves from an object side to an image plane side of said system during zooming from a wide-angle end to a telephoto end of said system;

a third lens group having positive refracting power; and

a fourth lens group that has positive refracting power and is movable during zooming, wherein:

said first lens group consists of one positive single lens alone,

said third lens group comprises three lenses, a positive lens, a positive lens and a negative lens, or two lenses, a positive lens and a negative lens,

said third lens group has at least one aspherical surface therein, and

a negative lens is located nearest to an [image] object side of the second lens group that satisfies at least the following condition (7):

$$v_{21} < 40 \qquad \dots (7),$$

wherein  $v_{21}$  is an Abbe's number of said negative lens.

42. (Twice Amended) A zoom lens system comprising in order from an object side of said zoom lens system:

a first lens group having positive refracting power;

a second lens group that has negative refracting power and moves from an object side to an image plane side of said system during zooming from a wide-angle end to a telephoto end of said system;

a third lens group having positive refracting power; and

a fourth lens group that has positive refracting power and is movable during zooming, wherein:

said first lens group comprises two lenses, a negative lens and a positive lens,

said third lens group [comprises] consists of three lenses, a positive lens, a positive lens and a negative lens, and

said third lens group has at least one aspherical surface therein.

43. (Twice Amended) A zoom lens system comprising in order from an object side of said zoom lens system:

a first lens group having positive refracting power;

a second lens group that has negative refracting power and moves from an object side to an image plane side of said system during zooming from a wide-angle end to a telephoto end of said system;

a third lens group having positive refracting power; and

a fourth lens group that has positive refracting power and is movable during zooming, wherein:

said first lens group comprises two lenses, a negative lens and a positive lens, or one positive lens alone,

said third lens group comprises three lenses, a positive lens, a positive lens and a negative lens, or two lenses, a positive lens and a negative lens,

said fourth lens group consists of one positive single lens alone,

said third lens group has at least one aspherical surface therein, and

a negative lens is located nearest to an [image] object side of the second lens group and satisfies at least the following condition (7):

$$v_{21} < 40 \qquad \dots (7),$$

wherein  $v_{21}$  is an Abbe's number of said negative lens.

45. (Twice Amended) A zoom lens system comprising in order from an object side of said zoom lens system:

a first lens group having positive refracting power;

a second lens group that has negative refracting power and moves from an object side to an image plane side of said system during zooming from a wide-angle end to a telephoto end of said system;

a third lens group having positive refracting power; and

a fourth lens group that has positive refracting power and is movable during zooming, wherein:

said first lens group comprises two lenses, a negative lens and a positive lens, or one positive lens alone,

said second lens group consists of a negative single lens, a negative single lens, and a positive single lens,

said third lens group comprises three lenses, a positive lens, a positive lens and a negative lens, or two lenses, a positive lens and a negative lens,

said third lens group has at least one aspherical surface therein, and

a negative lens is located nearest to an [image] object side of the second lens group that satisfies at least the following condition (7):

$$v_{21} < 40 \qquad \dots (7),$$

wherein  $v_{21}$  is an Abbe's number of said negative lens.

46. (Twice Amended) A zoom lens system comprising in order from an object side of said zoom lens system:

a first lens group having positive refracting power;

a second lens group that has negative refracting power and moves from an object side to an image plane side of said system during zooming from a wide-angle end to a telephoto end of said system;

a third lens group having positive refracting power; and

a fourth lens group that has positive refracting power and is movable during zooming, wherein:

said first lens group comprises two lenses, a negative lens and a positive lens, or one positive lens alone,

said third lens group comprises a positive lens, a positive lens and a negative lens,

said third lens group has at least one aspherical surface therein, and

a negative lens is located nearest to an [image] object side of the second lens group that satisfies at least the following condition (7):

$$v_{21} < 40 \qquad \dots (7),$$

wherein  $v_{21}$  is an Abbe's number of said negative lens.

47. (Twice Amended) A zoom lens system comprising in order from an object side of said zoom lens system:

a first lens group having positive refracting power;

a second lens group that has negative refracting power and moves from an object side to an image plane side of said system during zooming from a wide-angle end to a telephoto end of said system;

a third lens group having positive refracting power; and

a fourth lens group that has positive refracting power and is movable during zooming, wherein:

said first lens group comprises two lenses, a negative lens and a positive lens, or one positive lens alone,

said third lens group comprises a positive single lens convex on an object side thereof and a doublet consisting of a positive lens convex on an object side thereof and a negative lens concave on an image side thereof,

said third lens group has at least one aspherical surface therein, and

a negative lens is located nearest to an [image] object side of the second lens group that satisfies at least the following condition (7):

$$v_{21} < 40 \qquad \dots (7),$$

wherein  $v_{21}$  is an Abbe's number of said negative lens.



49. (Twice Amended) A zoom lens system comprising in order from an object side of said zoom lens system:

a first lens group having positive refracting power;

a second lens group that has negative refracting power and moves from an object side to an image plane side of said system during zooming from a wide-angle end to a telephoto end of said system;

a third lens group having positive refracting power; and

a fourth lens group that has positive refracting power and is movable during zooming, wherein:

said first lens group comprises two lenses, a negative lens and a positive lens, or one positive lens alone,

said fourth lens group has a surface with a stronger curvature on an object side thereof than on an image side thereof,

said third lens group comprises three lenses, a positive lens, a positive lens and a negative lens, or two lenses, a positive lens and a negative lens,

said third lens group has at least one aspherical surface therein, and

a negative lens is located nearest to an [image] object side of the second lens group that satisfies at least the following condition (7):

$$v_{21} < 40 \qquad \dots (7),$$

wherein  $v_{21}$  is an Abbe's number of said negative lens.

50. (Amended) A zoom lens system according to any one of claims 1[, 42] or 43, wherein the first lens group remains fixed during zooming.

51. (Amended) A zoom lens system according to any one of claims 1[, 42] or 43, wherein the third lens group moves during zooming.

52. (Amended) A zoom lens system according to any one of claims 1[, 42] or 43, wherein the third lens group moves toward the object side of the system from the wide-angle end to the telephoto end.

53. (Twice Amended) A zoom lens system comprising in order from an object side of said zoom lens system:

a first lens group having positive refracting power;

a second lens group that has negative refracting power and moves from an object side to an image plane side of said system during zooming from a wide-angle end to a telephoto end of said system;

a third lens group having positive refracting power; and

a fourth lens group that has positive refracting power and is movable during zooming, wherein:

said first lens group comprises two lenses, a negative lens and a positive lens, or one positive lens alone,

said third lens group comprises three lenses, a positive lens, a positive lens and a negative lens, or two lenses, a positive lens and a negative lens,

said third lens group has at least one aspherical surface therein,

a negative lens is located nearest to an [image] object side of the second lens group that satisfies at least the following condition (7):

$$v_{21} < 40 \qquad \dots (7),$$

wherein  $v_{21}$  is an Abbe's number of said negative lens, and  
a condition  $0.5 < |F_2 / F_3| < 1.2$  is satisfied, where  $F_i$  is a focal length of an i-th lens group.

54. (Twice Amended) A zoom lens system comprising in order from an object side of said zoom lens system:

a first lens group having positive refracting power;

a second lens group that has negative refracting power and moves from an object side to an image plane side of said system during zooming from a wide-angle end to a telephoto end of said system;

a third lens group having positive refracting power; and

a fourth lens group that has positive refracting power and is movable during zooming, wherein:

said first lens group comprises two lenses, a negative lens and a positive lens, or one positive lens alone,

said third lens group comprises three lenses, a positive lens, a positive lens and a negative lens, or two lenses, a positive lens and a negative lens,

said third lens group has at least one aspherical surface therein,

a negative lens is located nearest to an [image] object side of the second lens group that satisfies at least the following condition (7):

$$v_{21} < 40 \qquad \dots (7),$$

wherein  $v_{21}$  is an Abbe's number of said negative lens, and

a condition  $0.49 < |L_3 / L_2| < 1$  is satisfied, where  $L_i$  is an amount of movement of an i-th lens group from the wide-angle end to the telephoto end.

55. (Twice Amended) A zoom lens system comprising in order from an object side of said zoom lens system:

a first lens group having positive refracting power;

a second lens group that has negative refracting power and moves from an object side to an image plane side of said system during zooming from a wide-angle end to a telephoto end of said system;

a third lens group having positive refracting power; and

a fourth lens group that has positive refracting power and is movable during zooming, wherein:

said first lens group comprises two lenses, a negative lens and a positive lens, or one positive lens alone,

said third lens group comprises three lenses, a positive lens, a positive lens and a negative lens, or two lenses, a positive lens and a negative lens,

said third lens group has at least one aspherical surface therein,

a negative lens is located nearest to an [image] object side of the second lens group that satisfies at least the following condition (7):

$$v_{21} < 40 \quad \dots (7),$$

wherein  $v_{21}$  is an Abbe's number of said negative lens, and

a condition  $2 < (F_{3,4w}) / IH < 3.3$  is satisfied, where  $F_{3,4w}$  is a composite focal length of said third and fourth lens groups at the wide-angle end, and IH is a radium of an image circle.

56. (Twice Amended) A zoom lens system comprising in order from an object side of said system:

- a first lens group having positive refracting power;
- a second lens group having negative refracting power;
- a third lens group having positive refracting power; and
- a fourth lens group having positive refracting power,

wherein:

during zooming, a space between said first and second lens groups, a space between said second and third lens groups and a space between said third and fourth lens groups vary independently,

said third lens group consists of, in order from an object side thereof, a double-convex positive lens, and a doublet consisting of a positive meniscus lens convex on an object side thereof and a negative meniscus lens, and said fourth lens group consists of a double-convex lens having a large curvature on an object side surface thereof, and

a negative lens is located nearest to the [image] object side of the second lens group and a condition  $v_{21} < 40$  is satisfied, wherein  $v_{21}$  is an Abbe's number of said negative lens.

57. (Amended) A zoom lens system comprising in order from an object side of said system:

- a first lens group having positive refracting power;
- a second lens group having negative refracting power;
- a third lens group having positive refracting power; and

a fourth lens group having positive refracting power,  
wherein during zooming, a space between said first and second lens groups,  
a space between said second and third lens groups and a space between said third  
and fourth lens groups vary independently,

wherein said third lens group consists of, in order from an object side  
thereof, a double-convex positive lens, and a doublet consisting of a positive  
meniscus lens convex on an object side thereof and a negative meniscus lens, and  
said fourth lens group consists of a [double-convex] positive lens having a large  
curvature on an object side surface thereof, and

wherein the first lens group [comprises] consists of two lenses, a negative  
lens and [one] a positive lens, and the second lens group comprises, in order from an  
object side thereof, a negative lens, a negative lens and a positive lens.

58. (Amended) A zoom lens system comprising in order from an object  
side of said system:

a first lens group having positive refracting power;  
a second lens group having negative refracting power;  
a third lens group having positive refracting power; and  
a fourth lens group having positive refracting power,  
wherein during zooming, a space between said first and second lens groups,  
a space between said second and third lens groups and a space between said third  
and fourth lens groups vary independently,

wherein said third lens group consists of, in order from an object side  
thereof, a double-convex positive lens, and a doublet consisting of a positive

meniscus lens convex on an object side thereof and a negative meniscus lens,  
wherein said first lens group consists of two lenses, a negative lens and a positive lens, and said fourth lens group consists of a [double-convex] positive lens having a large curvature on an object side surface thereof, and

wherein the second lens group is positioned on the image side at a telephoto end of the zoom lens system rather than at a wide-angle end of the zoom lens system, and the third lens group is positioned on the object side at the telephoto end of the zoom lens system rather than at the wide-angle end of the zoom lens system.

60. (Amended) A zoom lens system comprising, in order from an object side thereof,

a positive first lens group [comprising one single lens] consisting of two lenses, a negative lens and a positive lens;

a negative second lens group comprising, in order from an object side thereof, a negative lens convex on an object side thereof, a negative lens concave on an image side thereof and a positive lens convex on an object side thereof;

a positive third lens group comprising, in order from an object side thereof, a positive single lens convex on an object side thereof and a doublet consisting of a positive lens convex on an object side thereof and a negative lens concave on an image side thereof, with any of surfaces therein being defined by an aspheric surface, and

a fourth lens group comprising one positive single lens convex on an object side thereof,

wherein at least the second, third and fourth lens groups move for zooming from a wide-angle end to a telephoto end of said zoom lens system, the second lens group moves toward the image side at the telephoto end rather than at the wide-angle end, and the third lens group moves toward the object side at the telephoto end rather than at the wide-angle end.

62. (Amended) A zoom lens system comprising in order from an object side of said system:

a first lens group having positive refracting power;

a second lens group that has negative refracting power and moves from an object side to an image plane side of said system during zooming from a wide-angle end to a telephoto end of said system;

a third lens group that has positive refracting power and is movable during zooming; and

a fourth lens group that has positive refracting power and is movable during zooming, wherein:

said first lens group consists of two lenses, a negative lens and a positive lens, or one positive lens alone,

said third lens group [comprises] consists of three lenses, a positive lens, a positive lens and a bi-concave negative lens, or two lenses, a positive lens and a bi-concave negative lens, and

said third lens group has at least one aspherical surface therein.



64. (Amended) A zoom lens system comprising in order from an object side of said system:

a first lens group having positive refracting power;

a second lens group that has negative refracting power and moves from an object side to an image plane side of said system during zooming from a wide-angle end to a telephoto end of said system;

a third lens group having positive refracting power; and

a fourth lens group that has positive refracting power and is movable during zooming, wherein:

said first lens group consists of two lenses, a negative lens and a positive lens, or one positive lens alone,

said second lens group comprises at least two single lenses,

said third lens group [comprises] consists of three lenses, a positive lens, a positive lens and a negative lens, or two lenses, a positive lens and a negative lens,

said third lens group has at least one aspherical surface therein, and

the following condition (4) is satisfied:

$$0.6 < |F2 / F3| < 1 \quad (4)$$

where  $F_i$  is a focal length of an  $i$ -th lens group.

65. (Amended) A zoom lens system comprising in order from an object side of said system:

a first lens group having positive refracting power;

a second lens group that has negative refracting power and moves from an object side to an image plane side of said system during zooming from a wide-angle end to a telephoto end of said system;

a third lens group having positive refracting power; and

a fourth lens group that has positive refracting power and is movable during zooming, wherein:

said first lens group consists of two lenses, a negative lens and a positive lens, or one positive lens alone,

said second lens group comprises at least three lens components,

said third lens group [comprises] consists of three lenses, a positive lens, a positive lens and a negative lens, or two lenses, a positive lens and a negative lens,

said third lens group has at least one aspherical surface therein, and

the following condition (4) is satisfied:

$$0.6 < |F_2 / F_3| < 1 \quad (4)$$

where  $F_i$  is a focal length of an  $i$ -th lens group.

66. (Amended) A zoom lens system comprising in order from an object side of said system:

a first lens group having positive refracting power;

a second lens group that has negative refracting power and moves from an object side to an image plane side of said system during zooming from a wide-angle end to a telephoto end of said system;

a third lens group having positive refracting power; and

a fourth lens group that has positive refracting power and is movable during zooming, wherein:

said first lens group consists of two lenses, a negative lens and a positive lens [, or one positive lens alone],

said third lens group comprises three lenses, a positive lens, a positive lens and a negative lens, or two lenses, a positive lens and a negative lens, and said third lens group consists of two lens components,

said third lens group has at least one aspherical surface therein, and

the following condition (4) is satisfied:

$$0.6 < | F2 / F3 | < 1 \quad (4)$$

where  $F_i$  is a focal length of an  $i$ -th lens group.

New claims 70-72 have been added.

End of Appendix